

# **BRIEFING SUMMARY**

## **FLORIDA PHOSPHATE MINING INITIATIVE**

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**Prepared by the  
South Site Management Branch  
Waste Management Division  
U.S. Environmental Protection Agency, Region 4**



10764145

**STATUS/SUMMARY  
FLORIDA PHOSPHATE MINING SITES  
EPA CERCLIS DATABASE**

<u>SITE NAME/LOCATION</u>	<u>CERCLIS ID. NO.</u>	<u>CERCLIS ENTRY DATE</u>	<u>EPA PROGRESS</u>			<u>POTENTIAL SOURCES</u>	<u>STATUS</u>
			<u>PA</u>	<u>SI</u>	<u>SIP</u>		
Farmland Industries, Inc., Bartow, Polk County	FLD043055003	10/1/79	3/80	5/90	7/94	Two sulfuric acid, two phosphoric acid, superphosphoric acid, diammonium phosphate, monoammonium phosphate plants. Surge pond, two primary treatment ponds, secondary treatment pond, three polishing ponds. Lime storage area, water filled sand mine pits, fw lake. 500 acre gypsum stack.	Operations conducted from 1965 to present. FDEP issued gw monitoring permit in 1985; FDEP issued warning notice in 1987 for gw violations; FDEP consent order issued in 1988; Numerous metal and radionuclide exceedances - radium-226 as high as 34pCi/g in soil.
USS Agrichem, Ft. Meade, Polk County	FLD045003316	10/1/79	3/80	6/91	9/95	Plant produces/produced sulfuric acid, phosphoric acid, fluosilicic acid, and triple super phosphate. Three gypsum stacks span 133 acre area. Three NPDES discharge permits. 110 tons of PCB contaminated soil excavated in 1995 from chemical storage area.	GW monitoring conducted between 1986 through 1994, no significant exceedances. Monitoring of gypsum indicates exceedances of radionuclides. May 1990, facility exceeded SO2 emissions...fined by FDEP.
T/A Mineral Corp., Mulberry Plant (Agrifos), Mulberry, Polk County	FLD077586634	11/1/79	9/85	6/91	9/95	160 acre settling pond. Fuel oil, amines, kerosene, ammonia, sulfuric acid, and fatty acid added to float and remove phosphate from sand.	Plant operated from 1976 through 1979. Benefication plant dismantled prior to 1980, surrounding land reclaimed. <b>NO DATA AVAILABLE.</b>



Mobil Chemical Co./Electro Phos. Div., Mulberry, Polk County	FLD070864285	8/1/80	8/82	6/91	10/95	Phosphate rock, coke, water, silica combined in furnace to produce elemental phosphorous. Waste streams included slag and phosphate contaminated water. "Phossy" water contaminated with metals, salts, silicates, fluorides, phosphates, and radionuclides including radium-226 and radium-228.	Facility operated from 1975 until 1983. Groundwater monitoring required by FDEP. Enforcement action ongoing due to violations from gross alpha, fluoride, radium-226, radium-228, pH, and TDS. FDEP currently in negotiations with Mobil to conduct additional assessment work and remediation.
Agrico Chem. South Pierce Works, Bartow, Polk County	FLD092980150	8/1/80	3/80	6/91	9/95	Plant produces phosphoric acid, granular triple super phosphate, and sulfuric acid. Gypsum stack and process pond covers 560 acre area. Lab wastewater reportedly run to process pond. Lab waste included carbon tetrachloride, toluene, xylene, acetone, methyl ethyl ketone, and sulfuric acid. 43 acre landfill including solid waste, oil filters, demolition debris, oil containers, furniture, machine parts.	Facility began operations in 1972. <b>MINIMAL DATA.</b>
IMC/Clear Springs Mine, Clear Springs Rd., Bartow, Polk County	FLD000770420	11/1/79	9/85	6/91	4/95	Twenty-one square mile facility, multiple clay settling areas approx. 2000 acres in size. Also includes sand tailings and rock storage areas and former beneficiation plant.	Operations began in 1949. Facility now closed. Proposed housing & industrial development. Currently owned by Clear Springs Land Development Company.
INTL Mineral & CHEM/Kingsford Mine, Doc Durrance Rd., Bradley Junction, Polk County	FLD000770453	6/26/85	6/85	6/91	4/95	Clay settling areas estimated at 3800 acres. Also includes sand tailings and rock storage areas and former beneficiation plant.	Operations began in 1966; facility estimated at 7400 acres. Currently operating mine and beneficiation plant, clay settling area & sand tailings area, surrounds IMC New Wales Chem. Plant & Phosphogypsum stack.

Brewster Lonesome Mine, SR 39 & SR 674, Lonesome, Hillsborough County	FLD000826834	11/1/79	6/85	3/91	-	Clay settling and sand tailing areas, beneficiation plant, and rock storage areas.	Operations began in 1976 as partnership with Kerr-McGee and American Cyanamid. Facility approx. 18,850 acres. Lonesome beneficiation plant closed, portion north of South Prong Alafia River and east of SR 39 donated to State as Alafia River Recreation Area - mostly reclaimed- some active mining & reclamation remain, clay settling areas & sand tailings areas. Remaining portion consolidated into the IMC Four Corners/Lonesome Mine complex.
Haynesworth Mine, Brewster Plant, Bradley Junction, Polk County	FLD000826842	11/1/79	9/85	3/91	-	Clay settling and sand tailing areas, beneficiation plant, and rock storage areas.	Operations began in 1967 as a partnership between American Cyanamid and Kerr- McGee. Facility estimated at 14,131 acres Haynesworth beneficiation plant closed. Consolidated into IMC Kingsford complex.
Gardinier, Inc./ Ft. Meade Mine, (Cargill) Ft. Meade, Polk County	FLD000827428	11/1/79	9/85	3/91	-	Clay settling and sand tailing areas, beneficiation plant, and rock storage areas.	Operated prior to 1983. 2200 acre facility. 11,000,000 lbs used oil disposed in sand tailing area annually. Phosphoric acid plant also recovered uranium as a by-product. 20 drums of uranium tetrafluoride once stored at facility. Facility temporarily shutdown.
W.R. Grace & Bonny Lake Mine, (Cargill) Bartow, Polk County	FLD003952033	10/1/79	3/80	6/91	9/95	Closed mine and beneficiation plant; three clay settling areas, sand tailings areas, and two gypsum stacks. 1988 private wells contaminated by facility, residents placed on public water.	Mining operations conducted from 1969 to 1976. 3500 acre facility. Formerly owned by Seminole Fertilizer, now owned by Cargill Chemical Plant. Chemical plant and phosphogypsum stacks still in operation.
Estech General Chemicals, Silver City Mine, Bartow, Polk County	FLD004106829	10/01/79	3/80	6/91	8/95	Closed mine, beneficiation plant, chemical plant, phosphogypsum stack; clay settling and sand tailings areas;	Former mine and beneficiation plant; facility approx. 3850 acres. Operations conducted from 1960 to 1990. Mines partially reclaimed. Portions of mine now owned, and within, the Florida Power Corp. Hines Energy Facility.

Borden Chem. Co./Tenoroc Mine, Tenoroc Mine Rd, Alburndale, Polk County	FLD980727432	11/1/79	9/85	7/91	6/95	Closed mine, beneficiation plant, four clay settling areas (1169 acres) and three sand tailings areas (289 acres).	Currently state owned fish management area known as Tenoroc Fish Management Area. Core area of Saddle Creek Restoration & Alternative Mitigation Project. Facility formerly operated from 1965 to 1978. Deeded to State in 1982. Facility approx. 6000 acres. Former owners include Coronet Phosphate Co., American Agriculture Chemical Company, Smith Douglas Co., Continental Oil Co., and Agrico Chemical Co.
Grace, W.R. & Four Corners Mine, Mulberry, Polk County	FLD991302308	11/1/79	9/85	7/91	7/95	Clay settling areas estimated at 1940 acres. Facility also includes sand tailing areas, beneficiation plant, and rock storage areas.	Operating mine & benefication plant, clay settling and sand tailings area, incorporates a portion of the former Lonesome Mine. Operations began in 1985, approx. 20,000 acre facility.
Borden Feed Phosphate CMPLX, Plant City, Hillsborough County	FLD001704741	10/1/79	3/80	9/89	9/93	Old solid waste LDFL, industrial LDFL, oil disposal areas, process wastewater ponds, spoils areas. Waste water ponds estimated at 332 acres.	Facility formerly operated from 1908 to 1920's. Operations conducted by Coronet phosphates. Acquired by AMAX Chemical Company in 1945, which built Borden Feed Complex.
Mulberry Phosphates, Mulberry, Polk County	FLD004106415	2/5/01	-	-	-	Clay settling and sand tailing areas, beneficiation plant, and rock storage areas.	NuGulf Wingate Creek mine & benefication plant north of SR 64, Manatee County - Piney Point Chemical Plant & phosphogypsum stack on lower Tampa Bay - Mulberry Chemical plant & phosphogypsum stacks in Mulberry on North Prong Alafia River, currently in bankruptcy/receivership. FDEP currently moving to close stacks and chemical plants.
Central Phosphates, Plant City, Hillsborough County	FLD098930076	11/1/79	3/80	5/90	7/94	Facility includes four sulfuric acid plants, two phosphoric acid plants, four granulated triple super phosphate, and ammonium phosphate plants, and a uranium recovery plant. Gypsum disposed of in 410-acre stack.	Currently owned by CF Industries, comprised of a chemical plant and phosphogypsum stack. Facility approx. 1500 acres. Operations began in 1965.

Mobil/Ft. Meade Mine, Ft. Meade, Polk County	FLD021714639	11/01/79	9/85	6/91	9/95	Beneficiation plant, 8,206 acres of clay settling ponds, 2,500 acres of sand tailings. Mine estimated at 4 miles, and includes four of the clay settling ponds. Phosphate was separated from sand using amino fatty acid, kerosene, fuel oil, sulfuric acid, sodium hydroxide, methyl ethyl ketone, and ammonia.	Mining conducted from 1956 to 1990. Mine reclamation conducted from 1990 to 1995. Minimal data indicates no significant priority pollutant nor radionuclide contamination. However, given size of facility, studies to date were likely inadequate to properly assess facility.
Estech, Inc., Watson Mine, Fort Meade, Polk County a.k.a. Swift Old Colony Mine	FLD980385496	11/01/79	6/86	6/91	8/95	Closed mine and beneficiation plant, clay settling areas, flocculated clay-in-pits & sand tailings,	Operations conducted from early 1930's till 1989. Facility approx. 15,000 acres in size. State-lead contamination assessment conducted in 1994. Report concluded no further action; however, no assessment for radionuclides was conducted. Majority of reclaimed land in agricultural production (mostly citrus and pasture).
IMC Phosphates (Agrico) Palmetto Mine, Bradley Junction, Polk County, a.k.a. Hooker's Prairie Mine	FLD980727077	11/1/79	9/85	3/91	-	Clay settling and sand tailing areas, beneficiation plant, and rock storage areas.	Majority of tract incorporated in to the Cargill Hooker's Prairie Mine, Non-mandatory being reminded and/or used as clay settling areas. Seminole Fertilizer interim owner in 1988.
IMC Phosphates (Agrico) Payne Creek Mine, Ft. Green Rd., Bradley Junction, Polk County	FLD980727135	11/1/79	9/85	6/91	9/94	Clay settling areas estimated at 4,296 acres. Facility also includes sand tailing areas, beneficiation plant, and rock storage areas.	Operations began in 1965. Facility approx. 17, 128 acres. Interim owner Freeport-McMoRan, limited partners. Operating mine & beneficiation plant, clay settling and sand tailings areas, now incorporates portions of the Palmetto Track and US AgriChemicals Rockland Mine.
Agrico Chem. Co./Saddle Creek Mine, Lakeland, Polk County	FLD980727192	11/1/79	9/85	6/91	9/95	Closed mine and beneficiation plant, clay settling and sand tailings areas.	Two separate tracts 1) north of and adjacent to Tenoroc Fish Management Area, and 2) south of US 92 east of Saddle Creek, east half of tract has approved "Development of Regional Impact from city of Lakeland for Housing & Commercial development.

**STATUS/SUMMARY**  
**FLORIDA PHOSPHATE MINING SITES**  
**EPA CERCLIS DATABASE**

<u>SITE NAME/LOCATION</u>	<u>CERCLIS ID. NO.</u>	<u>CERCLIS ENTRY DATE</u>	<u>TYPE</u>	<u>SOURCES/FEATURES</u>	<u>STATUS</u>
Farmland Industries, Inc., Bartow, Polk County	FLD043055303 0	10/01/79	Processing Plant. 2480 acre facility. PA - 3/01/80 SI - 5/08/90 SIP - 7/25/94 OCA -	Two sulfuric acid, two phosphoric acid, superphosphoric acid, diammonium phosphate, monoammonium phosphate plants. Surge pond, two primary treatment ponds, secondary treatment pond, three polishing ponds. Lime storage area, water filled sand mine pits, fw lake. 500 acre gypsum stack.	Operations conducted from 1965 to present. FDER PA conducted in 1980; FDEP issued gw monitoring permit in 1985; FDEP issued warning notice in 1987 for gw violations; FDEP consent order issued in 1988; NUS SSI conducted in 1989; NUS conducted SI in 1990. Numerous metal and radionuclide exceedances - radium-226 as high as 34pCi/g in soil.
USS Agrichem, Ft. Meade, Polk County	FLD045003316	10/01/79	Processing Plant. 860 acre facility PA - 3/1/80 SI - 6/10/91 SIP - 9/26/95	Plant produces/produced sulfuric acid, phosphoric acid, fluosilicic acid, and triple super phosphate. Three gypsum stacks span 133 acre area. Three NPDES discharge permits. 110 tons of PCB contaminated soil excavated in 1995 from chemical storage area.	GW monitoring conducted between 1986 through 1994, no significant exceedances. Monitoring of gypsum indicates exceedances of radionuclides. May 1990, facility exceeded SO2 emissions...fined by FDEP.
<del>Agrifos</del> T/A Mineral Corp., Mulberry, Polk County	FLD077586634	11/01/79	Mine and benefication plant. PA - 9/16/85 SI - 6/4/91 SIP - 9/26/95	160 acre settling pond. Fuel oil, amines, kerosene, ammonia, sulfuric acid, and fatty acid added to float and remove phosphate from sand.	Plant operated from 1976 through 1979. Benefication plant dismantled prior to 1980, surrounding land reclaimed. <b>NO DATA AVAILABLE.</b>

Mulberry Plant (Agrifos)



*Mobil Chemical Co. / Electro Phos Div.*

Mobil Mining & Minerals Co., Mulberry, Polk County	FLD070864285	8/01/80	Processing Plant. 300 acre facility.  PA - 8/1/82 SI - 6/7/91 SIP - 10/31/95	Phosphate rock, coke, water, silica combined in furnace to produce elemental phosphorous. Waste streams included slag and phosphate contaminated water. "Phossey" water contaminated with metals, salts, silicates, fluorides, phosphates, and radionuclides including radium-226 and radium-228.	Facility operated from 1975 until 1983. Groundwater monitoring required by FDEP. Enforcement action ongoing due to violations from gross alpha, fluoride, radium-226, radium-228, pH, and TDS. FDEP currently in negotiations with Mobil to conduct additional assessment work and remediation.
Agrico Chem. South Pierce Works, Bartow, Polk County	FLD092980150	8/01/80	Processing Plant, gypsum stack, process pond, inactive landfill. 2450 acre facility.  PA - 3/1/80 SI - 9/1/84 SIP - 9/29/95	Plant produces phosphoric acid, granular triple super phosphate, and sulfuric acid. Gypsum stack and process pond covers 560 acre area. Lab wastewater reportedly run to process pond. Lab waste included carbon tetrachloride, toluene, xylene, acetone, methyl ethyl ketone, and sulfuric acid. 43 acre landfill including solid waste, oil filters, demolition debris, oil containers, furniture, machine parts.	Facility began operations in 1972. PA conducted in 1983; SIP conducted in 1995. <b>MINIMAL DATA.</b>
IMC Phosphates, Clear Springs Mine, Clear Springs Rd., Bartow, Polk County	FLD000770420	11/01/79	PA - 9/12/85 SI - 6/4/91 SIP - 9/26/95	Closed mine and beneficiation plant, clay settling areas & sand tailings. Proposed housing & industrial development. Currently owned by Clear Springs Land Development Company.	
<del>IMC Phosphates Clear Springs Mine</del> IMC Phosphates Clear Springs Mine, Doc Durrance Rd., Bradley Junction, Polk County	<del>FLD000770453</del> FLD000770453	06/26/85	PA - 6/26/85 SI - 6/5/91 SIP - 4/14/95	Currently operating mine and beneficiation plant, clay settling area & sand tailings area, surrounds IMC New Wales Chem. Plant & Phosphogypsum stack.	



Brewster Lonesome Mine, SR 39 & SR 674, Lonesome, Hillsborough County	FLD000826834	11/01/79	PA - 6/29/85 SI - 3/13/91	Lonesome beneficiation plant closed, portion north of South Prong Alafia River and east of SR 39 donated to State as Alafia River Recreation Area - mostly reclaimed- some active mining & reclamation remain, clay settling areas & sand tailings areas. Remaining portion consolidated into the IMC Four Corners/Lonesome Mine complex.	
<del>Brewster Haynesworth</del> Mine, Bradley Junction, Polk County	FLD000826842	11/01/79	PA - 9/19/85 SI - 3/13/91	Haynesworth beneficiation plant closed. Clay settling areas & sand tailing areas. Consolidated into IMC Kingsford complex.	
<del>Gardiner Inc</del> Cargill (Gardiner) Ft. Meade Mine, Ft. Meade, Polk County (Cargill)	FLD000827428	11/01/79	PA - 9/12/85 SI - 3/13/91	Operating mine and beneficiation plant. Temporarily shutdown. Clay settling & sand tailing areas.	
Cargill W.R. Grace & Bonnie Lake Mine, Bartow, Polk County (Cargill)	FLD003952033	10/01/79	PA - 3/1/80 SI - 6/7/91 SIP - 9/29/95	Closed mine and beneficiation plant, clay settling & sand tailings areas. Operating chemical plant and phosphogypsum stacks.	
<del>General Chemicals</del> Estech Silver City Mine, Bartow, Polk County	FLD004106829	10/01/79	PA - 3/04/80 SI - 6/10/91 SIP - 8/18/95	Closed mine, beneficiation plant, chemical plant, phosphogypsum stack; clay settling and sand tailings areas; portions of mine now owned, and within, the Florida Power Corp. Hines Energy Facility.	
Mobil Ft. Meade Mine, Ft. Meade, Polk County	FLD021714639	11/01/79	Phosphate Mine, 15,736 acres. PA - 9/12/85 SI - 6/8/91 SIP - 9/25/95	Beneficiation plant, 8,206 acres of clay settling ponds, 2,500 acres of sand tailings. Mine estimated at 4 miles, and includes four of the clay settling ponds. Phosphate was separated from sand using amino fatty acid, kerosene, fuel oil, sulfuric acid, sodium hydroxide, methyl ethyl ketone, and ammonia.	Mining conducted from 1956 to 1990. Mine reclamation conducted from 1990 to 1995. Assessments conducted include: PA 1985; SI 1991; Underground Storage Tank CAP 1992; SIP 1995. Minimal data indicates no significant priority pollutant nor radionuclide contamination. However, given size of facility, studies to date were likely inadequate to properly assess facility.



<i>Inc.</i> Estech Watson Mine, Fort Meade, Polk County	FLD980385496	11/01/79	PA - 6/5/86 SI - 6/8/91 SIP - 8/18/95	Closed mine and beneficiation plant, clay settling areas, flocculated clay-in-pits & sand tailings, majority of reclaimed land in agricultural production (mostly citrus and pasture).	
IMC Phosphates (Agrico) Palmetto Mine, Bradley Junction, Polk County	FLD980727077	11/01/79	<del>PA - 9/12/85</del> SI - 3/13/91	Majority of tract incorporated in to the Cargill Hooker's Prairie Mine, Non-mandatory being reminded and/or used as clay settling areas.	
IMC Phosphates (Agrico) Payne Creek Mine, Ft. Green Rd., Bradley Junction, Polk County	FLD980727135	11/01/79	PA - 9/12/85 SI - 6/10/91 SIP - 9/2/94	Operating mine & beneficiation plant, clay settling and sand tailings areas, now incorporates portions of the Palmetto Track and US AgriChemicals Rockland Mine.	
<del>Williams Company</del> (Agrico) Saddle Creek, Lakeland, Polk County <i>Agrico Chemical Co/ Saddle Creek Mine</i>	FLD980727192	11/01/79	PA - 9/12/85 SI - 6/7/91 SIP - 9/13/95	Closed mine and beneficiation plant, clay settling and sand tailings areas. Two separate tracts 1) north of and adjacent to Tenoroc Fish Management Area, and 2) south of US 92 east of Saddle Creek, east half of tract has approved "Development of Regional Impact from city of Lakeland for Housing & Commercial development.	
<i>Chem. Co. /</i> Borden Tenoroc Mine, Tenoroc Mine Rd, Alburndale, Polk County  <i>Grace W.R. &amp; Co. / Four Corners Mine</i>	FLD980727432	11/01/79	PA - 9/12/85 SI - 7/2/91 SIP - 6/2/95 ESI - 10/01	Closed mine, beneficiation plant, clay settling and sand tailings areas. Currently state owned fish management area known as Tenoroc Fish Management Area. Is core area of Saddle Creek Restoration & Alternative Mitigation Project.	
<del>IMC Phosphates (W.R. Grace) Four Corners Mine,</del> Mulberry, Polk County	FLD991302308	11/01/79	PA - 9/12/85 SI - 7/18/91 SIP - 7/14/95	Operating mine & beneficiation plant, clay settling and sand tailings area, incorporates a portion of the former Lonesome Mine.	
Borden Feed Phosphate CMT, Plant City, <i>Hillsborough</i> <i>COMPLX</i>	FLD001704741	10/01/79	PA - 3/1/80 SI - 9/20/89 SIP - 9/21/93	Non-mandatory area, status unknown.	



Mulberry Phosphates, Mulberry, Polk County	FLD004106415	02/05/01		NuGulf Wingate Creek mine & beneficiation plant north of SR 64, Manatee County - Piney Point Chemical Plant & phosphogypsum stack on lower Tampa Bay - Mulberry Chemical plant & phosphogypsum stacks in Mulberry on North Prong Alafia River, currently in bankruptcy/receivership. FDEP currently moving to close stacks and chemical plants.	
Central Phosphates, Plant City, <i>Hillsborough County</i>	FLD098930076 <i>Disc.</i>	<i>11/01/79</i>	<i>PA - 3/01/80 SI - 5/04/90 SIP - 7/25/94</i>	Currently owned by CF Industries, comprised of a chemical plant and phosphogypsum stack.	